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GENERAL DOCUMENTATION AND EVIDENCE HANDLING REQUIREMENTS – FORENSIC BIOLOGY SECTION PROCEDURE MANUAL, SECTION I	Issue No. 3
	Effective Date: 1-March-2005
<p>5 BLOOD ANALYSIS</p> <p>5.1 Whole Blood Specimens</p> <p>5.1.1 All whole blood specimens will be preserved on stain cards as soon as possible after receipt. DNA typing will be conducted when appropriate.</p> <p>5.1.2 The following method describes the procedure to preserve whole blood specimens on stain cards.</p> <p>5.1.2.1 Safety and Other Considerations:</p> <p>5.1.2.1.1 Perform the procedure in a well-ventilated area, such as in a bio-safety cabinet (preferable) or fume hood.</p> <p>5.1.2.1.2 Avoid drafty areas and areas subject to temperature and/or humidity extremes.</p> <p>5.1.2.1.3 Wear safety glasses. If the procedure is not performed in a hood where a sash separates you from the blood, wear a face shield.</p> <p>5.1.2.1.4 The use of double gloves may be preferable.</p> <p>5.1.2.2 Supplies</p> <p>5.1.2.2.1 Bloodstain cards – Whatman Catalog # WB 10 00 14 <b>DO NOT USE FTA CARDS.</b></p> <p>5.1.2.2.2 Disposable transfer pipets</p> <p>5.1.2.2.3 Tissues (Kimwipes, etc.)</p> <p>5.1.2.2.4 Permanent ink pen or other permanent marker</p> <p>5.1.2.2.5 Biohazard disposal receptacle</p> <p>5.1.2.3 Procedure</p> <p>5.1.2.3.1 Describe the blood sample in notes, including any identifying information on the blood tube, as appropriate.</p>	

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<p data-bbox="581 321 1349 390">5.1.2.3.2 At a minimum, label the bloodstain card with the following data:</p> <p data-bbox="724 428 1105 464">5.1.2.3.2.1 subject's name</p> <p data-bbox="724 501 1076 537">5.1.2.3.2.2 case number</p> <p data-bbox="724 575 1076 611">5.1.2.3.2.3 item number</p> <p data-bbox="724 648 1138 684">5.1.2.3.2.4 date card is made</p> <p data-bbox="724 722 1068 758">5.1.2.3.2.5 your initials</p> <p data-bbox="581 795 1406 865">5.1.2.3.3 Mix the blood in the tube by gently inverting the tube several times.</p> <p data-bbox="440 903 1419 972"><b>CAUTION!</b> When mixing post-mortem samples, take care that the stopper does not become dislodged from the top of the tube.</p> <p data-bbox="581 1010 1446 1157">5.1.2.3.4 Uncap the tube so as to prevent any contaminating spatter or aerosol that may occur as the suction is broken in the tube. A tissue may be useful for covering the cap while it is being twisted off of the tube.</p> <p data-bbox="581 1194 1446 1524">5.1.2.3.5 Using a fresh disposable pipet for each blood sample, transfer blood from the tube to the appropriately labeled bloodstain card. Alternatively, slowly decant the liquid blood from the tube to the bloodstain card. If clotting of the sample has occurred or a red top tube was submitted, gently break up the clot (using the pipet tip, applicator sticks, etc.) before transferring the blood onto the bloodstain card. Discard any excess blood from the tube in an appropriate biohazard container.</p> <p data-bbox="440 1562 1446 1598"><b>CAUTION!</b> Do not over-saturate the card, as drips and spill-over can occur.</p> <p data-bbox="581 1635 1438 1892">5.1.2.3.6 Allow the bloodstain card to <b>COMPLETELY AIR DRY</b> before packaging it in an appropriately sealed and identified container. Allow the residual blood in the corresponding tube and the cap to air dry thoroughly before packaging in a separate container. The cards and tubes may be stored at room temperature or otherwise refrigerated or frozen.</p>	

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<p data-bbox="581 317 1409 386">5.1.2.3.7 If no analysis will be conducted on the sample, report that the sample has been preserved.</p> <p data-bbox="293 426 649 459">5.2 Bloodstain Analysis</p> <p data-bbox="391 499 1445 825">5.2.1 Working with only one item at a time to avoid sample mix-up and/or contamination, examine the item for visible red-brown staining. Describe the item and the appearance, size, and location of stains in notes, diagrams, and/or photographs, as appropriate. In instances where no stains are visible, the use of an alternate light source (ALS), ultra-violet (UV) light, and/or luminol may be helpful in locating stains. In some instances, in the absence of any visible stains, random swabbing of the item may be appropriate, depending on the item, substrate, color, other examinations requested, etc.</p> <p data-bbox="391 865 1227 898">5.2.2 Test stain/stained area for blood, record and report results.</p> <p data-bbox="488 938 1377 1008">5.2.2.1 If “stained” swabs are submitted with corresponding “control” swabs, the “control” swabs will not be examined.</p> <p data-bbox="488 1047 1409 1155">5.2.2.2 If tests on an item of evidence indicate the presence of blood, a substrate control (an unstained area adjacent to the stain), will be tested. These results will be recorded in the notes.</p> <p data-bbox="391 1194 1398 1264">5.2.3 If appropriate, examine the stain for a possible mixture of physiological fluids (semen, urine and/or feces) and record and report results.</p> <p data-bbox="391 1304 1450 1444">5.2.4 As appropriate, test the bloodstain for species origin when stain size allows and record and report results. Do not consume a sample for species origin determination if DNA analysis, which includes human DNA determination, will be more informative.</p> <p data-bbox="391 1484 1430 1554">5.2.5 Assess and document the suitability of stains/stained areas for DNA PCR-based typing.</p> <p data-bbox="391 1593 1114 1627">5.2.6 As appropriate, conduct DNA PCR-based typing.</p> <p data-bbox="488 1667 1433 1923">5.2.6.1 Conduct DNA PCR-based typing, record results, and report results and conclusions after comparing the profile(s) obtained to the appropriate known sample profiles. If a suspect or victim is eliminated, but a potentially probative foreign profile is identified, conduct a DNA Data Bank search for a “match” to the foreign profile, and report the results of the search. However, before proceeding with the Data Bank search, it may be appropriate to</p>	

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<p>discuss the probative nature of the evidence with the investigator. A Data Bank search will not be necessary if the investigator does not believe that the evidence is probative to the case. For example, the victim and suspect are eliminated as the contributor of a blood stain on the suspect's shirt. The stain may have no probative value to the case.</p> <p>5.2.6.2 Conduct DNA PCR-based typing in the absence of a suspect (no suspect case), record results, conduct a DNA Data Bank search for a "match" to a profile believed to be that of the putative perpetrator, and report the results of the search.</p> <p>5.2.6.3 In the absence of all appropriate known samples, conduct DNA PCR-based typing, record results, and conduct a DNA Data Bank search for a "match" to any suitable DNA profiles that are believed to be probative to the case. Report results and request the submission of the appropriate known samples.</p> <p>5.3 If appropriate, forward evidence to another section for analysis. Consult with other section examiners during analysis, as necessary.</p> <p>5.4 Return evidence to the primary examiner or to security for final disposition.</p> <p style="text-align: right;">♦END</p>	